

**Montana Board of Oil and Gas Conservation
Environmental Assessment**

Operator: Interstate Exploration, LLC
Well Name/Number: Star Bar Ranch 3-1
Location: NE NW Section 27 T19N R56E
County: Dawson, MT; **Field (or Wildcat)** W/C

Air Quality

(possible concerns)

Long drilling time: 20-30 days drilling time for a directional Red River Formation test.
Unusually deep drilling (high horsepower rig): No, large triple drilling rig for 12,000' TD directional Red River Formation Test.

Possible H₂S gas production: Yes, H₂S gas production possible from Mississippian and Devonian Formations.

In/near Class I air quality area: No Class I air quality area in the area of review.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

- ☒ Air quality permit (AQB review)
- ☐ Gas plants/pipelines available for sour gas
- ☐ Special equipment/procedures requirements
- ☐ Other: _____

Comments: No special concerns, adequate surface casing, 1600' to be set and cemented back to surface with proper BOP stack should mitigate any concerns. Triple rig to drill to 12,000' TD directional Red River Formation Test. If there are existing pipelines for natural gas in the area then associated gas must be tied into gathering system or if no gathering system nearby associated gas can be flared under Board Rule 36.22.1220.

Water Quality

(possible concerns)

Salt/oil based mud: Use freshwater and freshwater mud system on surface hole. Oil based invert drilling fluids (75/25 – 80/20 oil/water) for the mainhole from the base of surface casing to TD.

High water table: No high water table expected.

Surface drainage leads to live water: No, nearest drainage is an unnamed ephemeral tributary to Burns Creek, an ephemeral drainage, about ½ of a mile to the west from this location. There should not be any discharge of fluids off this location.

Water well contamination: No, closest water wells are about 3/8 of a mile to the west, about ½ of a mile to the south southeast, about 5/8 of a mile to the southeast, about 5/8 of a mile to the north, about ¾ of a mile to the southeast, from this well location. Depth of these water wells ranges from 30' to 130'. Surface hole will be drilled with freshwater and steel surface casing set and cemented from 1600' to protect surface waters and the Fox Hill aquifer.

Porous/permeable soils: No, sandy clay soils.

Class I stream drainage: No Class I stream drainages in the area of review.

Mitigation:

- ☐ Lined reserve pit

- ☒ Adequate surface casing
- ☐ Berms/dykes, re-routed drainage
- ☒ Closed mud system
- ☒ **Off-site disposal of liquids (in approved facility)**
- ☒ Other: 16 mil synthetic liner will be installed in the cuttings pit.

Comments: 1600' of surface casing cemented to surface adequate to protect freshwater zones. Also, fresh water mud systems to be used on surface hole. Cuttings pits will be utilized for cuttings disposal on wellsite, using closed loop drilling system. Oil based invert drilling fluid will be recycled. Completion fluids will be hauled to a permitted commercial disposal. Solids will be allowed to dry in the lined cuttings pit. Pit will be buried when dry. No concerns.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: No stream crossings.

High erosion potential: No high erosion potential. Location will require a moderate cut, up to 13.70' and small fill, up to 9.2'.

Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: Large, 400'X400' location size required.

Damage to improvements: Slight, surface use is grazing lands.

Conflict with existing land use/values: Slight.

Mitigation

- ☐ Avoid improvements (topographic tolerance)
- ☐ Exception location requested
- ☒ Stockpile topsoil
- ☐ Stream Crossing Permit (other agency review)
- ☒ Reclaim unused part of wellsite if productive
- ☐ Special construction methods to enhance reclamation
- ☐ Other _____

Comments: Access will be over existing county, #549 and 547. Will construct, about 122' of new access road off the county road into this location. Lined cuttings pits will be utilized, using closed loop drilling system. Oil based invert drilling fluid will be recycled. Completion fluids will be hauled to a permitted commercial disposal. Solids will be allowed to dry in the lined cuttings pit. Pit will be backfilled when dry. No special concerns

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences are about 3/4 of a mile to the southeast, about 3/4 of a mile to the north and about 7/8 of a mile to the east from this location. The town of Glendive is about 20 miles to the southwest from this location.

Possibility of H₂S: Yes H₂S is possible at this location, from the Mississippian and Devonian Formations.

Size of rig/length of drilling time: Triple drilling rig 20 to 30 days drilling time.

Mitigation:

- ☒ Proper BOP equipment
- ☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan
☐ Special equipment/procedures requirements
☒ Other: Standard H2S training for the rig personnel and H2S safety equipment on location.

Comments: No concerns. Proper BOP stack and adequate surface casing should be able to control any problems that occur. (BOP's 5,000 psig annular, pipe and blind rams) rule 36.22.1014. Distance to nearest residence sufficient to mitigate any concerns for H2S.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Species identified as threatened or endangered by USFWS are the Pallid Sturgeon, Interior Lease Tern and the Whooping Crane.

Candidate species are the Greater Sage Grouse and the Sprague's Pipit. NH tracker website lists one (1) species of concern, the Great Blue Heron. NH tracker website lists one (1) Potential Species of Concern the Haydon's Shrew.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DSL)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other: _____

Comments: There maybe species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified.

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DSL, federal agencies)
- ☐ Other: _____

Comments: Private surface lands. There maybe species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

- ☐ Substantial effect on tax base
- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: Wildcat well. No concerns.

Remarks or Special Concerns for this site

Well is a directional 12,000' Red River Formation Test.

Summary: Evaluation of Impacts and Cumulative effects

No long term impact expected. Some short term impacts will occur to the surface location.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki reviewed _____
(title): Chief Field Inspector Adminstrator
Date: June 13, 2013 August 30, 2013

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website

(Name and Agency)
Dawson County water wells
(subject discussed)
June 13, 2013
(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA
COUNTIES, Dawson County
 (subject discussed)

June 13, 2013
(date)

Montana Natural Heritage Program Website (FWP)

(Name and Agency)
Heritage State Rank= S1, S2, S3, T19N R56E
(subject discussed)

July 13, 2013
(date)

Montana Cadastral Website

(Name and Agency)
Surface Ownership and surface use Section 27 T19N R56E

(subject discussed)

June 13, 2013
(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____